

PHILIPS

NFC Applications

Philips Semiconductors

Sense & Simplicity

Agenda

- What is NFC
- Challenges & Benefits
- Applications & Segments Mix
- Standardisation



NFC - Technical Basics



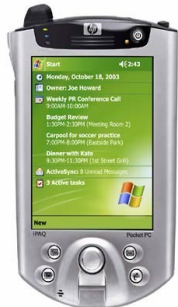
Wireless Short Range Communication Technology

- Based on RFID technology at 13,56 MHz, compatible with current infrastructure
- Operating distance typical 10 cm
- Instant connection for two devices (less than 0.1 sec)
- Secure communication (Anti-collision protocols, allows 2 devices to communicate)
- Data exchange rate today up to 424kbit/s (up to ~1 Mbit planned)
- Standardised in ISO 18092
- ***Compatible to existing contactless standards which are > 750M units in use***

Challenges & Benefits

- Making connectivity **intuitive**
 - So everybody can use it
- Keeping personal data **secure**
 - So the consumer has confidence
- Following a **standards** based approach
 - While avoiding paralysis by committees
- Enabling business models which **drive the industry**
 - So everyone can make money based on value services

HP different products Invent easy connect



Philips Connected Consumer strategy

Communication	Consumer	Automotive	Computing	Identification
				
• Mobile handsets • LAN/PAN • Traditional telecom	• TV & STB • Home AV • Portable CE • Games • Home gateway	• Car Infotainment • Car Networking	• Displays • Handheld • PC • PC Peripherals	• Chip cards • Memory cards • RFID • Other ID

← **NFC** →

easy-Wireless Printing

Bring Handheld devices next to the Printer to initiate the printing process

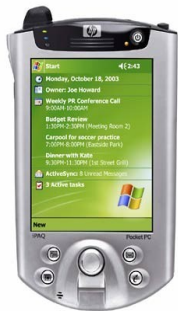
Setting & Initiation less than 1sec



AIO Printer + NFC



easy-Wireless Printing



OR



AIO Printer + NFC



Moving away from the printer the printing will
Start either with 802.11 or Bluetooth for long range data exchange

NFC for Desktop Applications



Contactless Payment Cards

Secure Payment



Access Point

Quick & Secure WLAN set-up



Digital Camera



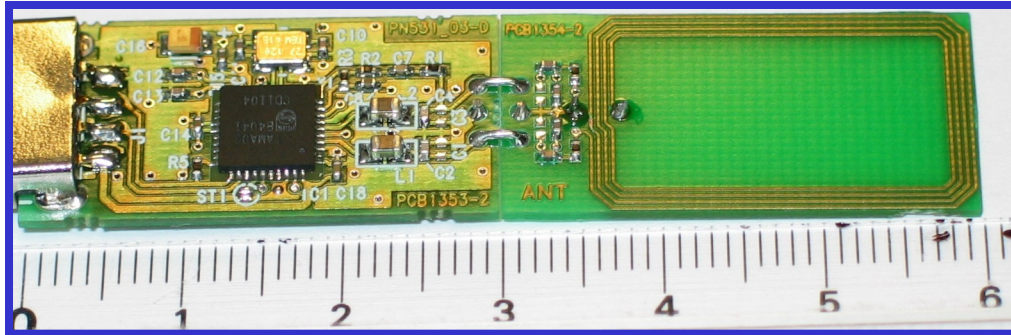
PDA & SmartPhone

Quick & Easy Handheld Authentication & Payment



How To Implement fast time-to-market

We are working with different reference design companies
For different applications



Plug&Play

NFC module with USB, Serial
interfaces

SW available



PHILIPS

BACK-UP

Tariq Shahab: TBD

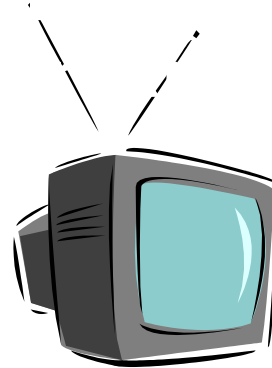
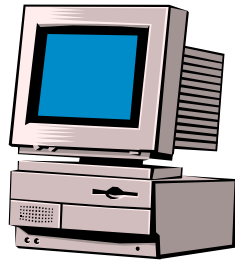
I still think HP practice of RFID tags in Printers, and big loss due to cartridges counterfeit, is opportunity for NFC. Let's discuss!

Wireless Printing

- HP is leading in RFID adoption in printers
- Among 8 top Pilots for Wal Mart
- ROI proven
- Loss of revenues due to Cartridges counterfeit
- NFC will serve dual purpose. Function of RFID as well as prevention of Cartridges counterfeit



Contents are Multi Billion Market. NFC value is recognised.



Music

Sports

Film

**Software
Distribution**

Gaming

eLearning

**Premium
news/ebooks**

SMS

MMS

Games

Ringtones

Music

Shopping

**Premium
News/Svcs**

Music

Film

Sports

Games

News

Shopping

Gambling

Games

Messaging

Music

Video

Other

Software

**Premium
news**

Games

**AS BACK
UP**

Groupings

- Online (PC/Internet) Entertainment (\$2.6B globally by 2007).
 - Music, Filmed Entertainment, Sports.
- Gaming (\$34.1B).
 - Mobile, iTV, Console, PC/Internet.
- Mobile Personalization and Communication (\$25B).
 - SMS, MMS, Ringtones.
- Interactive Television Services (\$12B).
 - Video on Demand, Set Top Box.
- Software Distribution and Licensing (\$280B).
 - Primarily Internet/PC.
- eLearning (\$300B).
 - Online courses.

NFC Applications Mix



Laptop

Easy configuration in Connected Home scenario or Hot Spot zone
Instant Bluetooth pairing (e.g Mobile Phone to transfer data(e.g picture



Wireless All in One

Easy configuration in Connected Home scenario

Instant Mobile printing from a PDA or Phone using BT or Wi-Fi



Desktop

Easy Configuration in Connected Home

Instant portable devices pairing (e.g music player, digital camera...)



Digital
Camera



PDA

Easy Configuration in Hot Spot zone or Connected Home

Instant pairing with laptops or printers

Global Contact less Forecast / year, per application

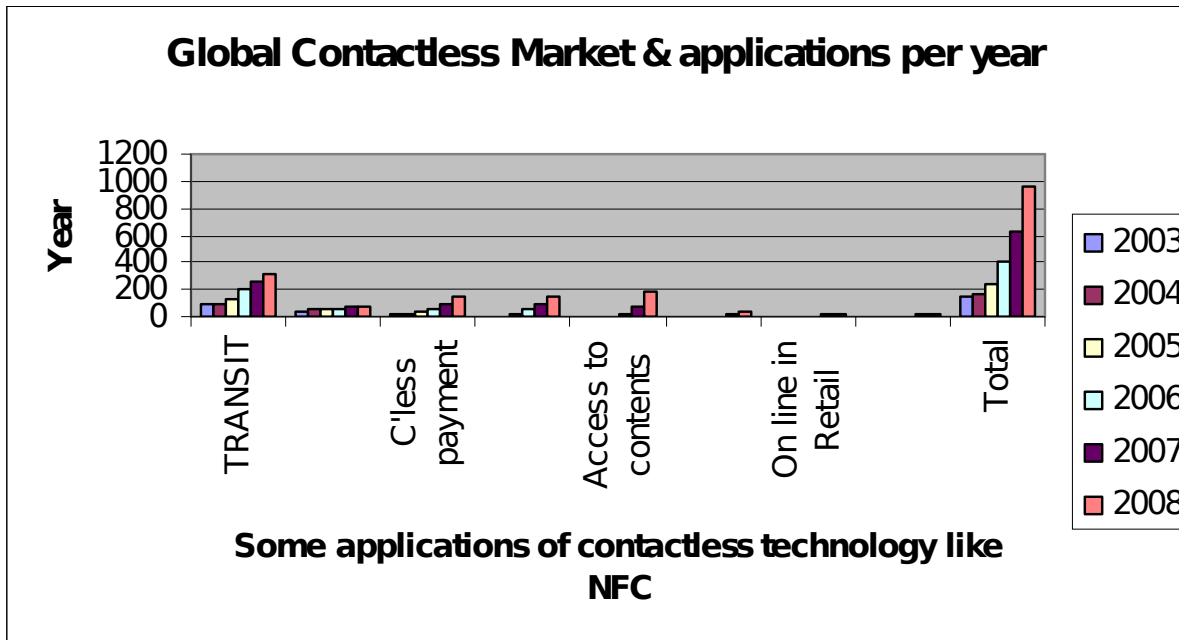
NFC-based phones will be main devices from 2006-2007

	2003	2004	2005	2006	2007	2008
TRANSIT	90	100	135	200	250	320
ACCESS	40	50	55	60	65	75
C'less payment	10	15	30	55	90	150
National ID	2	5	10	50	100	150
Access to contents			5	15	70	180
Medical			2	7	20	40
On line in Retail				5	15	25
Other applications			4	8	15	25
Total	142	170	241	400	625	965

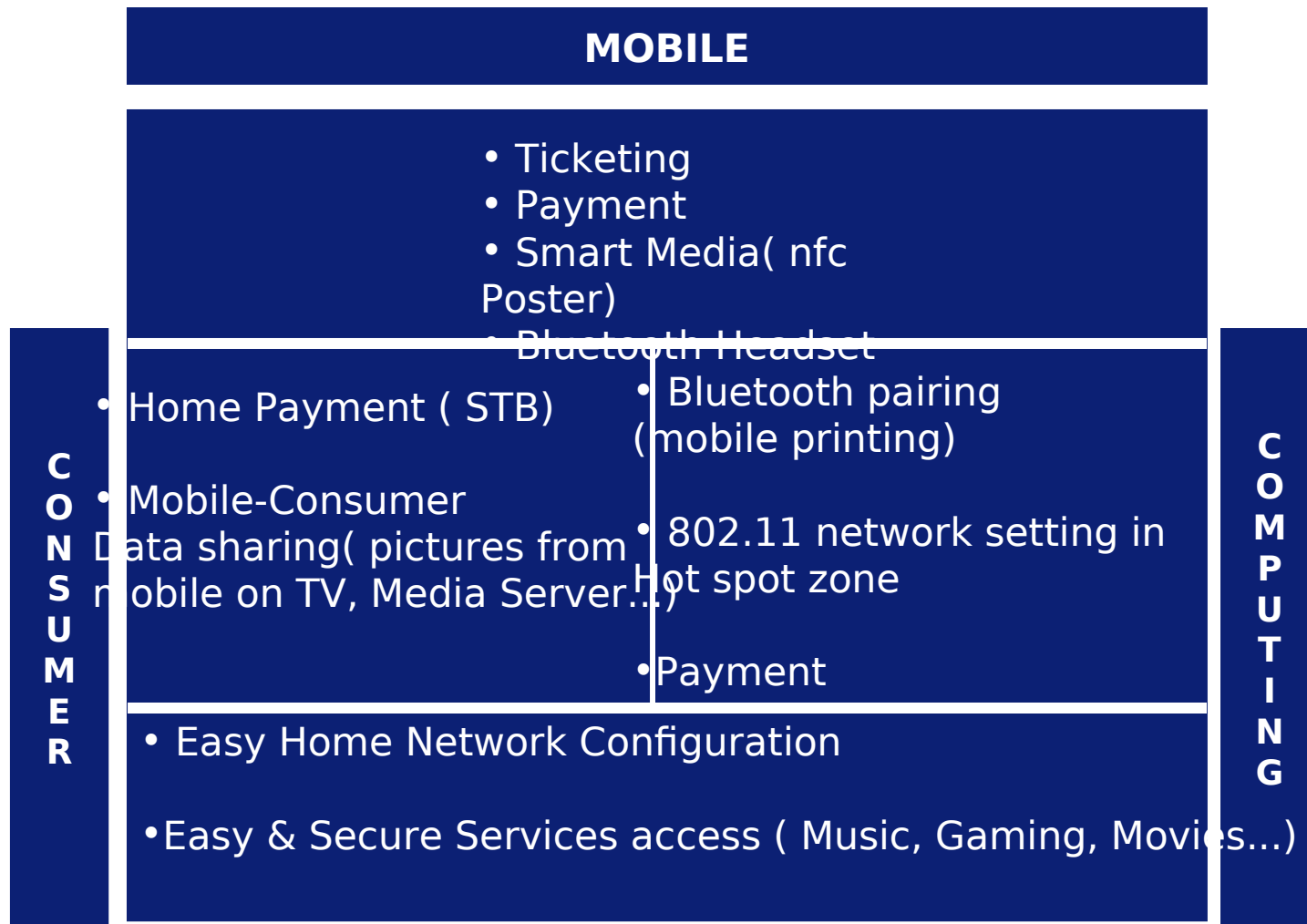
Today cumulative:

➤ **750 M**
Contactless
cards

➤ **NFC is backwards**
compatible



Market Application Segmentation



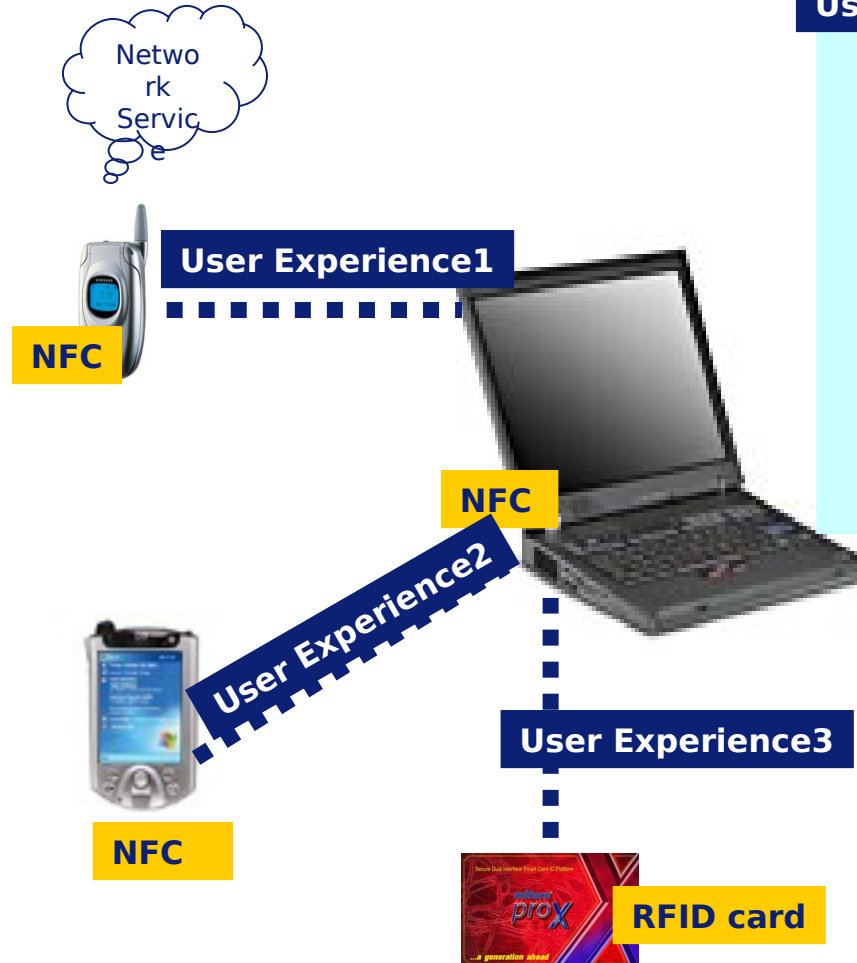
Expand your Mobile – Wi-Fi Experience

User Experience1

1. Simply hold your phone close to laptop within 6 inch.
2. NFC will automatically initiate communication, configure and request secured connection.
3. The network system verify the authentication, register, and authorize

User Experience2

(Corporate or home network...)
Simply Hold your handheld device next to your laptop and your data are synchronised



User Experience3

1. In Hot Spot Zone
2. Simply hold your corporate access control card next to your PC
3. Your are logged securely into your corporate network

**Fast device-to-device
recognition <100ms**